DOCUMENT RESUME

ED 274 354 IR 051 644

TITLE	Preservation Needs in State Archives.
INSTITUTION	National Association of Government Archives and Records Administrators, Albany, NY.
SPONS AGENCY	National Historical Publications and Records Commission, Washington, DC.
PUB DATE	Feb 86
CONTRACT	NHPRC-85-13
NOTE	79p.; Photographs will not reproduce.
AVAILABLE FROM	National Association of Government Archives and Records Administrators, Executive Secretariat, New York State Archives, 10A75 Cultural Education Center, Albany, NY 12230.
PUB TYPE	Viewpoints (120) -- Reports - Research/Technical (143)
EDRS PRICE	MF01/PC04 Plus Postage.
DESCRIPTORS	*Archives; *Cooperative Programs; *Facility Improvement; Federal Government; Interviews; *Preservation; Program Development; Program Effectiveness; Questionnaires; Surveys

ABSTRACT

Data were gathered by circulating questionnaires to each state archive, making site visits to representative archives, and holding discussions with key state archives and preservation leaders. The 2-year study concludes that no state archive currently approaches the goal of providing total preservation care for its holdings. Comprehensive and systematic programs requiring a significant commitment of new resources from the individual states, the federal government, and the private sector are recommended to solve state archives' preservation problems. The following specific programs are proposed: (1) adapt or design a preservation survey instrument for state archives to use in assessing their preservation needs; (2) conduct facilities needs analysis and planning; (3) build, expand, or upgrade state archives facilities; (4) enhance preservation education and skills development; (5) support regional conservation centers; (6) support state reprography projects; (7) meet archival holdings maintenance requirements; (8) develop new preservation and conservation tools; and (9) establish a committee for archives preservation. Endnotes are included, and an appendix provides statistical data on state archives administration, facilities, space and funds needs, holdings, fumigation, and micrographics. (KM)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED274354

NAGARA

THE NATIONAL ASSOCIATION OF GOVERNMENT ARCHIVES AND RECORDS ADMINISTRATORS

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

☒ This document has been reproduced as received from the person or organization originating it.

☐ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

PRESERVATION NEEDS IN STATE ARCHIVES

ALBANY, NEW YORK
FEBRUARY 1986

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

Bruce W. Dearstyne

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

IR051644

PRESERVATION NEEDS

IN

STATE ARCHIVES

National Association of Government Archives
and Records Administrators
Albany, New York
February, 1986

The State Archives Preservation Needs Assessment Project and publication of this report were supported by Grant 85-13 from National Historical Publications and Records Commission.

NAGARA

THE NATIONAL ASSOCIATION OF GOVERNMENT ARCHIVES AND RECORDS ADMINISTRATORS

NEWS RELEASE

REPORT DETAILS STATE ARCHIVES PRESERVATION NEEDS, ADVANCES RECOMMENDATIONS FOR ACTION

A report issued by the National Association of Government Archives and Records Administrators (NAGARA) concludes that "a preservation crisis confronts this nation's state archives. Most do not have adequate plans or resources to handle the preservation requirements of their holdings." The report advances several recommendations for action by the states themselves, by the federal government, and by other concerned parties to meet this critical and growing need.

Preservation Needs in State Archives (56 pp. plus appendices, Albany: National Association of Government Archives and Records Administrators, 1986) is the result of a two year study carried out for NAGARA by Howard P. Lowell, a nationally recognized preservation expert, with a grant from the National Historical Publications and Records Commission. Lowell distributed preservation program questionnaires to all state archives, visited ten of them for first-hand study of their preservation needs and programs, and also discussed problems with a number of preservation experts. His comprehensive report concludes that "no state archives approaches the goal of providing total preservation care for its permanently valuable records." Many states do not have adequate storage facilities. Most have no plans for confronting their preservation problem and lack conservation laboratory facilities. State archival programs tend to be understaffed, so few staff can work on preservation efforts, and most states lack trained preservation personnel. The report contends that "the need is both critical and immediate". If it is not met, "documentary resources essential for the American public to establish their rights, understand the past, cope with the present, and plan for the future will vanish forever."

The report advances several recommendations for a cooperative national approach to preservation, requiring commitment of new resources from the individual states, the federal government, and the private sector. Among the recommendations are: needs assessment and preservation planning for each state archives, upgrading of storage space and facilities, basic archival preservation treatment, increased microfilming, expanded training opportunities in preservation administration and conservation techniques, support for regional conservation centers, research and development to derive new preservation and conservation tools, and establishment of a Committee for Archives Preservation.

The report points out that the preservation problems of the nation's state archives are similar to those of other archival materials and research resources. Many of the solutions advanced in the report could also lead toward meeting those broader problems.

Copies of the report have been sent to state archival and records programs, to concerned federal agencies, and to other organizations and institutions interested in state archival preservation. NAGARA is an affiliate of the Council of State Governments, a national service organization for state governments, and will work closely with the Council, with the NHPRC, and with concerned organizations toward implementation of the recommendations.

Additional copies of Preservation Needs in State Archives are available from the NAGARA Executive Secretariat, New York State Archives, 10A75 Cultural Education Center, Albany, NY 12230.

IR05T1644

Executive Secretariat • New York State Archives • Room 10A75, Cultural Education Center • Albany, NY 12230 • 518-473-8037

TABLE OF CONTENTS

Preface i

Executive Summary 1

The Preservation Problem in State Archives..... 5

The Scope of the Problem..... 7

The NARA Survey..... 10

The State Assessment Reports..... 13

The NAGARA Project Survey..... 17

The NAGARA Consultant's Observations and Conclusions 21

Breaking the Cycle of Poverty..... 27

A Cooperative National Approach to Preservation..... 39

Assumptions..... 40

Proposed Areas for Program Development

- Preservation Planning..... 42
- Facilities Improvements..... 42
- State Archives Staff Enhancement 44
- Regional Conservation Centers..... 45
- Reprography 46
- Holdings Maintenance..... 46
- Research and Development..... 47
- Committee for Archives Preservation..... 48

Conclusion 51

Endnotes 53

Appendix

PREFACE

The fifty state archives hold over one million cubic feet of permanently valuable records that document government activity and define and protect the rights and responsibilities of both state governments and the citizens they serve. Each year another 45,000 cubic feet of records swell existing holdings. Collectively, states appropriate more than $18 million annually to preserve these archival records and make them available to government for its continuing administrative needs and to individuals for a variety of research uses.

Two decades ago Ernst Posner wrote in his classic study American State Archives: "The archival agency is responsible for protecting from physical deterioration the records entrusted to it."[1] Clearly state archives have yet to adequately meet this responsibility. Edwin C. Bridges, Director of the Alabama Department of Archives and History, concludes in Documenting America:

> In addition to reductions in funds, increases in work loads, and doubts about past practices, conservators [and archivists] are beset with an array of difficult new conservation problems which require urgent attention -- nitrate film, cheap paper, color photographs, and magnetic tapes. In this area, where tangible signs of archival progress could once be seen, a general sense of hopelessness and despair prevails today. Despite sincere efforts, no state archives addresses the conservation problem with confidence, and none can boast any plan that promises success. State archivists are staggered by mountains of work and totally lack the resources to make a significant impact. Meanwhile, accessions continue to pour in, and only a small fraction of the records receive any type of conservation treatment.[2]

The absence of comprehensive preservation programs for state archives means simply that we cannot assure the survival of permanently valuable information. It is no longer possible to ignore this fact. We must document the problem systematically and then take action toward its resolution, both collectively and in each state.

Working from this premise, the Board of Directors of the National Association of State Archives and Records Administrators (NASARA), ** at its annual meeting in Washington in July 1984, authorized NASARA's Executive Director to seek grant funds from the National Historical Publications and Records Commission (NHPRC) to undertake a systematic study of preservation needs in state archives. The study's

---

** NASARA became NAGARA -- the National Association of Government Archives and Records Administrators -- in February, 1985. NAGARA is a national association concerned with government records issues at the federal, state, and local levels.

report was to serve as the springboard for further planning and nationwide action. Specifically, the report would discuss and document the nature and dimensions of the preservation problem in state archival agencies, explore alternatives for meeting it, and provide an estimate of resources required.

At its November 1984 meeting the NHPRC approved grant 85-13 for $16,500 to conduct the study. The NHPRC also funded a supplemental grant for $7,500 in October, 1985. NAGARA, in turn, contracted with the Oklahoma Department of Libraries for Howard P. Lowell, administrator of its state archives and records management program, to serve as Project Director on a consultative basis.

The State Archives Preservation Needs Assessment Project officially started on 1 December 1984 with a completion deadline of 30 June 1985. This deadline was later extended to 31 December 1985 and again to 30 June 1986. I began by reviewing existing reports for information on state archives preservation requirements. This literature review included NHPRC-funded Assessment and Reporting Project reports from the 1982 round of grants and the final report from the NHPRC-funded Western States Materials Conservation Project. In December 1984, I prepared a lengthy questionnaire and circulated it to each state archives. Forty-three states returned a completed questionnaire. I took information on the Wisconsin program from its 1983-1984 annual report and from observations made during my site visit to that state.

Based on responses to the questionnaire and on other criteria such as program size and age, geographic location, level and extent of current preservation activity, involvement in cooperative preservation efforts, and willingness to assist in the project, I selected ten representative state archival programs for site visits. The purpose of these site visits was threefold: to study specific preservation problems and program efforts; to estimate collective resources available and needed; and to define program approaches that might begin to meet state archives preservation requirements. The states visited were: Alabama; California; Georgia; Kentucky; Minnesota; New York; North Carolina; Oregon; Utah; and Wisconsin. In addition I visited the state records center in New Jersey and the Hawaii State Archives in conjunction with other projects and used the experience of our own program in Oklahoma as additional sources of information in the project needs assessment process.

The NAGARA Board of Directors provided oversight and direction for the study. I presented my preliminary findings, conclusions, and recommendations to the Board on 19 February 1985 at which time the Board suggested additional lines of inquiry. These I incorporated into the plan of work. The Board also discussed the draft report at its August 1985 meeting in Madison, Wisconsin and its 24-25 January 1986 meeting in Washington.

NAGARA's President convened a select committee in Washington on 10-11 December 1985 to review the draft report. Members present were: Lew Bellardo, Bruce Dearstyne, Madel Morgan (Mississippi Department of Archives and History); Roy Turnbaugh (Oregon State Archives); Sue Holbert (Minnesota Historical Society); Andrew Raymond (Society of American Archivists); Anna Nelson (George Washington University); Page Putnam Miller (National Coordinating Committee for the Promotion of History); and Margaret Child (Smithsonian Institution). Unable to attend was Toni Carbo Bearman (National Commission on Library and Information Science). NAGARA's President also convened a public meeting on 11 December 1985 at the National Archives to discuss the draft report's findings and recommendations. I included ideas and comments from both meetings in the final report.

Throughout the project, NAGARA President Lewis J. Bellardo, State Archivist of Kentucky, Treasurer Edwin C. Bridges, Director of the Alabama Department of Archives and History, and Executive Director Bruce W. Dearstyne of the New York State Archives, worked closely with me. I greatly appreciate their guidance, assistance, and support.

This report represents the first systematic attempt to document a serious problem facing state archivists and records administrators today -- how to preserve the one million plus cubic feet of records entrusted to their care so that the information contained in these records remains available to those who need it now and in the future. Failure to confront and solve this problem will result in the loss of significant portions of our documentary heritage.

Howard P. Lowell
Oklahoma City, Oklahoma
February, 1986

[1]Ernst Posner, American State Archives. (Chicago: University of Chicago Press, 1965), 359.

[2]Edwin C. Bridges, "Consultant Report: State Government Records Programs," in Documenting America: Assessing the Condition of Historical Records in the States ed. by Lisa B. Weber. (Atlanta: National Association of State Archives and Records Administrators, 1984), 7-8.

The [preservation] problem is a pervasive one. Most of the records created up to the present time are on paper that with the passage of time will inevitably deteriorate. The disintegration process is especially rapid for high acid, wood pulp paper used extensively during the past century. Modern information management technology has not offered a definite solution to the problem. Microfilm, for example, will also deteriorate unless it is produced to exacting archival standards and stored under proper conditions. Magnetic media may lose the capacity to be read and interpreted by machines, and most computer printouts are on thin, high-acid, poor quality paper which breaks down rapidly. In a sense, preservation may be regarded as the most important historical records issue . . . today. The physical deterioration of our records could nullify all efforts at improved management and access.

Toward a Usable Past: Historical Records in the Empire State

Several states lack adequate storage for housing state archives.

Courtesy Alabama Dept. of Archives and History

EXECUTIVE SUMMARY

Serious danger threatens the nation's archival record. The paper on which most of our documentary heritage is written is deteriorating at an alarming rate while some newer recording media are even more transitory. Most government records set down during the past century, and those created today, cannot withstand the rigors of use and time without significant losses in image quality, physical strength, and chemical stability. Unless archivists successfully meet this preservation challenge, a significant portion of the historical records contained in our archives will literally crumble to dust by the mid-21st century.

The fifty state archives collectively hold over one million cubic feet of permanently valuable government records. Presently no state archives approaches the goal of providing total preservation care for its holdings. Even those state archives with active preservation programs continue to fall short of this preservation goal.

The preservation problem is not only pervasive, it is also both critical and immediate. We must attack it vigorously, positively, and cooperatively on a wide front. In documenting the scope of the preservation problem in the nation's state archives, the National Association of Government Archives and Records Administrators (NAGARA) has identified several urgent preservation needs:

* we must have facilities that provide proper physical storage conditions, with modern fire detection and suppression capabilities, security systems, positive environmental controls, and programs that use preservation-quality supplies for housing archives holdings;

* we must set up a national preservation research program to develop and disseminate preservation standards, evaluate existing techniques and procedures, and develop new preservation methods and conservation treatments;
* we must provide educational opportunities for archivists to learn preservation administration concepts and training programs that produce archives conservators and archives conservation technicians;
* we must provide regional conservation centers which are cost-effective alternatives for meeting archives restoration requirements, sharing expensive conservation resources, and enhancing archives preservation capabilities;
* we must reevaluate traditional government records appraisal criteria and develop new ways to appraise, manage, preserve, and make accessible government information that exists in electronic format;
* we must set an intensive program in motion to cope with the enormous processing backlog in state archives;
* we must significantly increase the quantity and quality of preservation microfilming programs in state archives; and
* we must develop new tools to aid in preservation policy determination, preservation decision-making, strategic planning, resource allocation, and preservation program evaluation.

These preservation needs are significant, both in scope and merit, but most states cannot begin to commit sufficient resources to meet them. As a start toward addressing the state archives preservation problem, NAGARA proposes a ten-year program costing $134,150,000 in nonstate funds. This investment would provide the essential initial support for states to meet the state archives

preservation challenge, and indeed assist in meeting the preservation challenge that all archival repositories face. The NAGARA program would also require a minimum state investment from appropriations or other sources of $337,650,000 to support state archives preservation.

First steps for meeting the challenge and solving the state archives preservation problem are:

* develop assessment tools and conduct preservation needs assessments in each state archives;
* assess state archives facilities needs;
* provide preservation administration training for state archives staff;
* strengthen existing regional conservation center programs and establish additional centers;
* provide enhanced state archives preservation reprography programs;
* provide an intensive program for state archives holdings maintenance; and
* extend the preservation research and development program at the National Archives.

We can take many of these first steps under existing Congressional mandates for programs of the National Historical Publications and Records Commission, the Office of Preservation of the National Endowment for the Humanities, and the National Archives and Records Administration. We can also seek private sector support for these activities and encourage increased state appropriations for preservation of state archives.

Unless state archives have the funds, facilities, tools and techniques to preserve their holdings or the information in these holdings, state government records of enduring value will not survive. State archives will not be able to fulfill their trust as guardians of much of America's public documentary heritage. Documentary resources essential for the American public to establish their rights, understand the past, cope with the present, and plan for the future will vanish forever.

THE PRESERVATION PROBLEM IN STATE ARCHIVES

Each of the fifty states has permanently valuable government records they need to preserve and make accessible for research use. These irreplaceable records are called state archives. Their continuing value, both to the government that created them and to the public, is sufficient for each state to appropriate funds for special programs and facilities to maintain and preserve them indefinitely.

The value of state archives derives from information they contain and evidence they provide. State archives not only document past decisions, they often establish and protect current rights and responsibilities of both government and the governed. State archives have enduring value because they can help us deal intelligently with the present and prepare for the future. They are also significant cultural artifacts of our society for they are a primary means by which we pass our culture from one generation of Americans to the next, perhaps discovering in the process lessons that our predecessors were unable to see.

Of more immediate practicality, records found in state archives are essential to administrative continuity. They provide information for research into environmental, health, education, welfare, and other societal issues. They provide crucial detail for repairing, renovating, or replacing our streets, bridges, public buildings, and public utilities. State archives contain evidence of land ownership, the passing of property to heirs and assigns, and official records of our accumulated legal proceedings. Our schools can use historical documents from state archives to teach analytical skills while developing a

cultural awareness of representative democracy and an appreciation of our common experience as a nation of states. Finally, state archives provide a record of public accountability for the ways in which elected officials and the bureaucracy have carried out their public trust and the mandates of the citizenry.

Archival records come in formats as varied as the information they contain -- sheets of paper, bound volumes, microforms, photographs, cassette tapes, video tapes, films, oversized maps, drawings, blueprints, computer tapes, optical disks, and other machine--readable media. Each presents difficult preservation problems for archivists to manage. Unless state archives have the funds, facilities, techniques, and tools to preserve these materials or the information they contain, valuable records will not survive. State archives will not be able to fulfill their trust as guardians of society's public documentary heritage. Unique documentary resources essential for the American people to establish their rights,

Oversized documents present yet another serious preservation problem for archivists to manage.
Courtesy Delaware Bureau of Archives & Records Management.

understand the past, cope with the present, and plan for the future will vanish forever.

The Scope of the Problem

Most government records created during the past century cannot withstand the rigors of use and time without significant loss in image quality, physical strength, and chemical stability. At the present time no state archives approaches the goal of providing total preservation care for its permanently valuable records. To meet this goal offers state archives a massive challenge for collectively they hold an estimated 2.5 billion individual items.

Five factors dominate the preservation problem in state archives: the enormous volume of records that state archives already hold and continue to acquire; the varying formats of modern documentation; the inferior quality of paper that government offices have used and continue to use; the natural physical deterioration that occurs as records age and are handled; and unsatisfactory storage conditions. A recent conservation program study from the Public Archives of Canada points out a sixth factor. Records often have deteriorated significantly by the time the archives receives them.[1] Most paper manufactured today has a useful life expectancy of only 25 to 50 years.

Several recognized causes accelerate deterioration: light; poor atmospheric conditions including air pollutants, unfavorable temperature, and relative humidity extremes; biological factors such as mold, insects, and rodents; mechanical damage from handling and abrasive dust particles; and acid, introduced

for the most part into the recording medium at the time of its manufacture. These factors affect all recording media to various degrees and hence all recording media require some preservation action to slow or arrest their influences. Natural disasters and deliberate destructive actions that people take also cause significant loss of information and damage to records.

One dictionary defines preservation as actions taken: (1) to protect from injury, peril, or other adversity; (2) to keep or maintain intact; and (3) to treat or prepare to prevent decay. This report uses "preservation" broadly to encompass any action that prevents, retards, or arrests deterioration or damage to archives holdings through controlling the environment, proper housing, and preventive care. "Preservation" includes: program planning; surveying and improving storage and collection conditions; conservation treatments; and transferring information from a deteriorating physical medium to a more stable one. "Conservation" in this report will mean laboratory treatments that stabilize an item to maintain it in an unchanging and usable condition, or actions taken to return a deteriorated or damaged document as nearly as possible to its original form or function with minimum further sacrifice of aesthetic and historic integrity. This latter conservation action is often called "restoration."

The staggering volume of records in state archives presents a challenge in itself. Former Archivist of the United States Solon J. Buck observed that government records management is "like keeping an elephant for a pet; its bulk cannot be ignored; its upkeep is terrific, and, although it can be utilized, uncontrolled it is potentially a menace."[2] The preservation problem in the nation's archives is just such a pet.

Research libraries face preservation concerns similar in nature and scope to those confronting archival repositories. Two decades ago the library profession was shocked by statistical evidence that 90 percent of all materials in research

library collections published in the United States between 1900 and 1939 would be unusable by the year 2000 due to their physical condition.[3] A few years later Edwin E. Williams, then Associate University Librarian at Harvard University, summed up the problem, articulating a goal for each program to adopt. "Everything in a library collection is deteriorating today, was deteriorating yesterday, and will continue to deteriorate tomorrow although we ought to retard the process."[4] Collection condition surveys at the Library of Congress and several major research libraries have more precisely quantified the extent of the preservation problem. Robert Parliament, former conservator at Princeton University, recently stated that "we know from surveys at Yale, here at Princeton, and at Stanford that at least 40 percent of their collections currently need aid, and you can apply that statistic to other organizations; it holds up reasonably well."[5] A pilot condition study recently completed at the New York Public Library concludes that much of the collection is brittle, especially volumes published before 1940; that paper declines significantly in strength after 45 to 65 years; and that the number of brittle books in the collection will double in the next fifty years.[6]

Despite the gross nature of early library estimates and the seemingly unsolvable problems presented, the library profession has developed intelligent approaches to meet its preservation challenge. The archives profession must do the same. Archivists must begin by carefully assessing how these research library findings and programs might contribute to solving archives preservation concerns. The state archives, which hold some of the oldest, most valuable documents in the United States as well as vast quantities of newer material should lead an attack on the preservation problem that all archives and historical manuscripts repositories share.

The NARA Survey

State archives have as yet no statistical estimates of their preservation problem. Only the National Archives and Records Administration (NARA) has attempted to design a scientific data-gathering instrument to survey archival preservation needs and to develop a preservation action plan based on the survey data. Conditions in the National Archives approximate those found in many states, and the NARA findings offer state archives useful comparisons and suggestions.

For the 3 billion paper records in the National Archives, NARA estimates that 10.5 percent require no preservation action at all and that 84.5 percent require only "holdings maintenance" which NARA defines as unfolding documents, placing them in acid-free folders and boxes, and properly shelving them in environmentally controlled and secure storage. The survey indicates that 4.6 percent of the holdings are rapidly fading stencil-mimeograph, thermofax, verifax, and other reproductions made during the 1930s, 1940s, and 1950s. These require immediate duplication to preserve their content. Finally, the survey finds that only .4 percent of the collection have sufficient intrinsic value, as opposed to informational or evidential value, to warrant the cost of conservation treatment in NARA's conservation laboratory. For nontextual records, 21 percent were found to need copying to a more stable medium while the remaining 79 percent require no treatment.[7]

To meet the goals of the National Archives Preservation Plan -- to preserve the documentary heritage of the United States government and to provide timely service to both government and scholarly researchers -- NARA has adopted the following strategies. It will:

1) allocate preservation resources according to need and use;
2) slow down natural aging of documents in storage by improving storage environment and performing holdings maintenance;
3) recopy rapidly deteriorating records as soon as possible;
4) reduce routine preservation laboratory work as much as possible to make room for servicing national treasures; and
5) prevent accumulation of any further backlog by performing comprehensive holdings maintenance at the time of accessioning.[8]

NARA estimates the various preservation processes will cost the following:

Holding Maintenance	$24.40 per cubic foot
Copying Documents	.264 cents per page
Conservation Laboratory Work	from $30 per page for "national treasures" to $3.90 per page for other records.

The estimated overall cost for preserving NARA's 1.35 million cubic feet of holdings is $209.1 million (in 1984 dollars) over a twenty-two year period. [9] The NARA Study concludes by noting "that the reason there is so much maintenance [preservation] to be performed and resulting costs are so high is that this work was not performed when it should have been."[10]

The National Archives is beginning a conservation survey project for the Presidential Library System seeking to compare preservation needs and priorities among the Libraries. Early results from the Johnson Presidential Library survey indicate that photocopies produced in the late 1950s and throughout the 1960s may present another serious preservation problem for archivists to solve.[11]

The State Assessment Reports

The NHPRC-supported Historical Records Needs Assessment and Reporting Projects of 1982 and 1984 show that not one state archives approaches the goal of providing adequate preservation care for its total holdings. Even those with active preservation programs continue to fall behind.

These state projects sought to evaluate historical records conditions and programs in each state and make recommendations for their improvement. The state archives program evaluations, one specific area of investigation, graphically show the dimensions of the preservation problem. The Kentucky Assessment Report illustrates this point:

> The [State Archives] Division is equipped to restore and preserve documents on a large scale through deacidification, lamination, encapsulation and other techniques. Items needing repair, restoration or protection are generally identified at the time they are processed. Some of the criteria used to determine treatment priorities are age, frequency of reference and how long they will be used. . . . Probably less than 1% of the records requiring preservation work have received attention.[12]

Nebraska found it had treated less than one percent of records requiring preservation work.[13] In Massachusetts, quality and age of the records held by the State Archives presented immense preservation concerns. "Decades of neglect and mishandling have injured and jeopardized elements of the collection."[14] Arizona's conservator was overwhelmed by the vast amount of work remaining.[15] Virginia echoed his situation, noting:

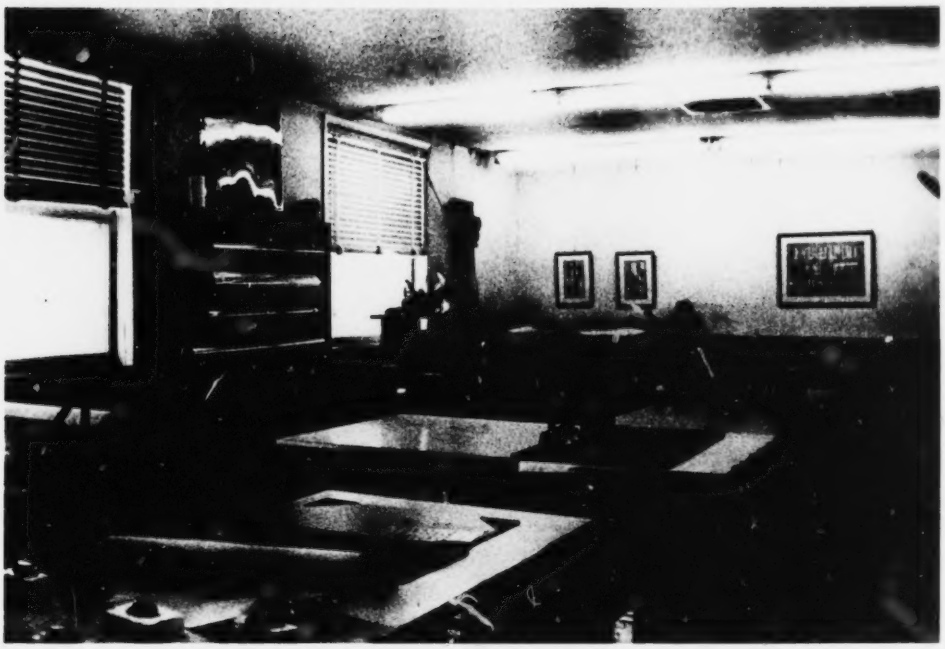
> In recent years the average amount of preservation work has amounted to approximately 10,000 pages, a miniscule amount when viewed against the volume of such work that is needed. Although a great deal of preservation microfilming has been accomplished in the past years and more is anticipated in the future, it seems clear that repair and preservation efforts are not keeping pace with the rate of deterioration and that the backlog grows apace with each passing year.[16]

Minnesota called attention to disaster preparedness while North Carolina foresaw "the distinct possibility of an enormous information gap caused by the erasure of data on magnetic media for possible reuse."[17] New York wanted training programs and manuals that "stress the administrative and managerial aspects of preservation -- how to evaluate collections, assess preservation needs, establish priorities, formulate disaster plans, and relate conservation and microfilming program development to overall institutional collection development and management policies."[18]

Edwin C. Bridges, in Documenting America, finds that:

> Restoration and conservation activities have undoubtedly suffered an absolute decline in the last five years. . . . Of the twenty states reporting in the assessment projects, eight provided no information about their conservation practices. Of the remaining twelve, five states have no labs, but two of these [Arizona and Montana] indicate that they still employ routine conservation practices. Seven states report that they have conservation labs, but many of these are small and underfunded.[19]

The State Assessment and Reporting Projects affirm that a preservation crisis does indeed confront state archives in this country.



There are few conservation laboratories in state archives to provide for treatment of individual documents.
Courtesy State Historical Society of Wisconsin

The NAGARA Project Survey

As part of this project's data-gathering process, the Project Director sent a detailed questionnaire to each state archival agency seeking information on state archives programs and preservation needs. The returned survey questionnaires from 43 states, plus information on collection size and accession rate from one other, allow a reasonable degree of confidence for correctly identifying state archives preservation resources, problem areas, and trends. Together with information gathered during ten site visits and discussions with key state archives and preservation leaders nationally, the data yield reliable composite information which defines the scope of state archives preservation efforts across the United States.[20]

The total state archives holdings (in some cases including local government records in the state archives repository) the 43 responding states report is 963,502 cubic feet, with an annual accumulation rate of 43,276 cubic feet. The volume of reported holdings ranges from highs of 85,000 cubic feet in Georgia, 79,100 cubic feet in Kentucky, 72,798 cubic feet in Maryland, and 60,000 cubic feet in Illinois, to lows of 3,000 cubic feet in South Dakota, 2,850 cubic feet in New Hampshire, and 700 cubic feet in Vermont. Kentucky, Maryland and New York project the highest annual accession rates -- 6,500 cubic feet, 5,000 cubic feet and 3,500 cubic feet respectively -- while Mississippi expects to add only 80 cubic feet to the state archives holdings each year and New Hampshire and Vermont 75 cubic feet each. Collective available storage space for new accessions in state archives is estimated at 228,489 cubic feet, with California reporting only 500 cubic feet of storage space remaining, Mississippi 200 cubic feet, Kansas 100

cubic feet, Louisiana 100 cubic feet (with a new facility under construction), and New Hampshire 85 cubic feet. Delaware, Texas, Arizona, Tennessee, Maryland (with a new facility also under construction), Rhode Island, Washington, and New Jersey report that no archives storage space is available for new accessions. At the State Historical Society of Wisconsin the Project Director found records stacked in the aisles. Rhode Island has not accessioned records into the state archives since 1967.

Collectively these 43 states spend $17,742,157 annually to administer the state archives function, employing 610.75 FTEs.[21] The largest reported budgets are Georgia ($3,350,000), North Carolina ($1,570,545), Louisiana ($1,000,000), Maryland ($982,330), Illinois ($873,000), and South Carolina ($775,000). Georgia reports the largest staff (81), followed by North Carolina (75). Louisiana reports 43 staff positions, South Carolina 42, and New York 24. At the other end of the spectrum, Rhode Island spends only $24,000 on its state archives program, while New Hampshire spends $27,000 and Vermont spends $47,300. Rhode Island and New Hampshire have one FTE each committed to the state archives function; Vermont has two. The Rhode Island position is classified as a nonprofessional.

Collectively the 43 reporting state appropriate $1,764,703 to support the state archives preservation function, however the states define it, with 58 FTEs committed to "preservation/conservation" and 113 FTEs committed to preservation microfilming.[22] Only six states budget no funds specifically for preservation. The total cubic feet of state archives receiving preservation treatment, including preservation microfilming, over the past five years is 38,599. Excluding the five largest state "treatment" programs -- Utah (10,000 cubic feet); Pennsylvania (4,073 cubic feet); Georgia (4,000 cubic feet); California (2,500 cubic

feet); and New York (2,326 cubic feet) -- the remaining 38 states treated a combined total of only 15,700 cubic feet of records.

Only nine of the 43 reporting states indicate that they have a policy statement on preservation of the state archives. Although 25 assert they have surveyed the collection for preservation needs, no state appears to have examined its collection on a scientific sample basis as several research libraries and the National Archives have done. Seventeen report both temperature and humidity controls in the state archives, but of these, eight say that the system does not function properly. Seven have no system for detecting and suppressing a fire. Nineteen report an automatic fire detection system; six report an automatic fire suppression system (most often a sprinkler system); eleven report that they have both capabilities. Thirty-four note that the state archives is protected with a security system. Only 16 of the 43 have a disaster preparedness plan.

Twenty-six of the reporting states have a preservation microfilming laboratory, and all others except Rhode Island, Montana, and Idaho indicate that they have access to preservation microfilming services through commercial vendors or some other state agency program. Twenty-seven report that they have conservation laboratory treatment facilities, although many are small and underfunded.[23] The site visits to Alabama and Georgia found well-equipped document conservation laboratories, but no conservation staff. Twelve states report that they practice lamination as a standard conservation treatment. Maryland uses this process the most extensively, deacidifying and laminating 65,656 sheets in the last reporting year. Illinois deacidified and laminated 42,276 sheets while North Carolina deacidified and laminated 35,000. The total number of sheets laminated was 170,894 compared to 41,418 reported encap-

sulations. Approximately 150 cubic feet of records annually (297,366 sheets) were deacidified.

Nineteen states report fumigation capabilities, with 6,723 cubic feet of records reported as receiving fumigation treatment. Georgia, Arkansas, North Carolina, and Pennsylvania account for 6,300 cubic feet of this total, with Georgia alone fumigating 3,050 cubic feet (using ethylene dichloride) and Arkansas 2,000 cubic feet (using ethylene oxide). Several states expressed concern about the dangers of fumigation chemicals for both staff and patrons and had ceased or severely curtailed fumigation operations. Seven of the states reporting fumigation capabilities had not used their equipment.

The responding states report a total of 7,314 reels of microfilmed archival records produced during the last reporting year. Utah accounts for 1,700 of this total. Other states with production of 100 reels or more of preservation microfilm during this period are: Georgia (750); Maryland (650); Kentucky (470); Hawaii (382); Mississippi (300); New York (263); California (250); Illinois (206); Pennsylvania (190); Tennessee (159); Oklahoma (150); Nebraska (120); Arizona (117); Delaware (103); Missouri (100); Louisiana (100); and Minnesota (100). These 43 states also report production of 3,413 microfiche during the year with Kentucky accounting for 2,200 of this total.

Microfilming is an acceptable and reliable preservation tool if one adheres strictly to recognized national specifications issued by the American National Standards Institute (ANSI) and the Association of Information and Image Management (AIIM) -- formerly the National Micrographics Association (NMA) --for film quality, processing, inspection, and storage for the master negative.[24] The 43 reporting state archives show inconsistencies in application of these standards. Twenty-seven report that there is no program for periodic inspection of master

negatives. Three report that they do not use the methylene blue test for determining residual hypo content and seven others could not answer this question. Only 19 report that master negatives are stored under conditions that meet ANSI specifications.[25] In many state archives the preservation microfilming program rests on a shaky foundation, for they tolerate non-adherence to ANSI and AIIM specifications.

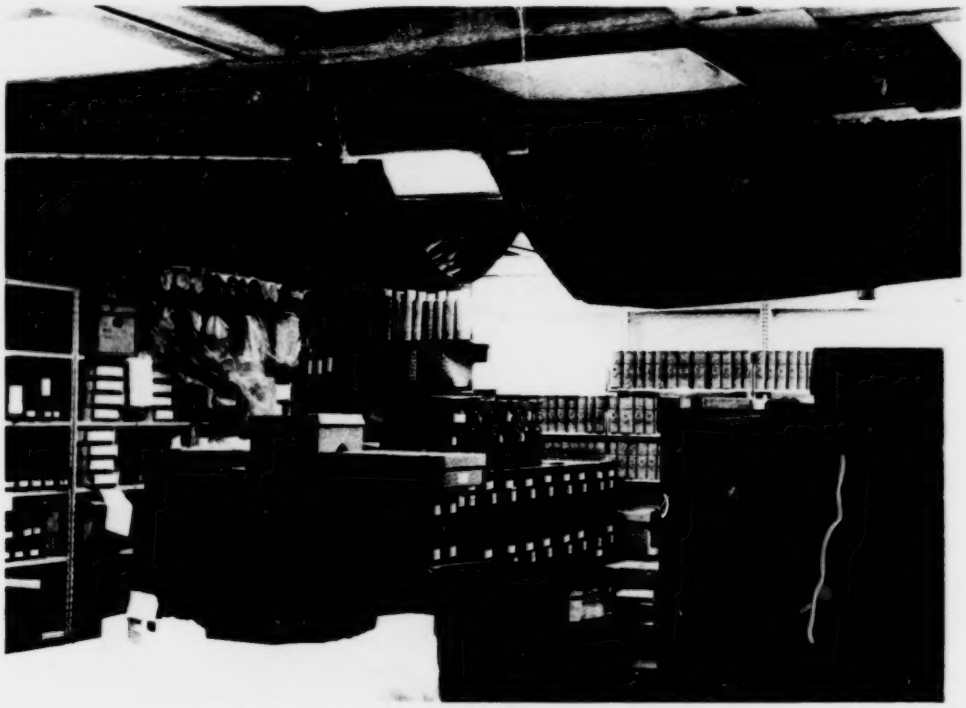
The NAGARA Consultant's Observations and Conclusions

A preservation crisis confronts this nations's state archives. Most do not have adequate plans or resources to handle the preservation requirements of their holdings.

The overwhelming evidence documents that no state will meet its total preservation needs soon. State programs are underfunded, so little money goes for preservation. State programs are understaffed, so few staff can work on preservation projects. Even were money available, only a small number of people have been trained in archives preservation administration and archives conservation practices. To make matters worse, confusion surrounds the validity of some preservation approaches and techniques, such as lamination. Progress in state archives preservation is hampered by feelings of futility, lack of program direction, and a sense that an overwhelming volume of records requires preservation attention.

Staff in most state archives conservation laboratories know only rudimentary conservation treatment procedures. Indeed, many are self-taught. The few

trained conservators often concentrate on repair or restoration of individual items while the vast majority of holdings slowly continues to disintegrate. Of the states I visited, only New York seemed to have a clear, comprehensive notion of the directions its preservation effort must take.



An in-house solution to chronic roof leaks.
Courtesy New York State Archives.

Many state archives lack adequate storage space for expanding collections. The space they have rarely includes the environmental controls required to protect holdings. Four states -- New York, Kentucky, Alabama, and California -- are struggling to get leaking roofs repaired. Fumigation programs have fallen into limbo as state archives search for safe alternatives to ethylene oxide and thymol -- now recognized as significant health hazards -- for eliminating insect

infestations and mold growth. In several states microfilming to preserve state archives information takes second place after income-generating records management microfilming. Not enough archivists pay attention to recognized national micrographics specifications. Often they store microfilm master negatives under less than ideal conditions and rarely does anyone reinspect those films to see how they are surviving.

Few preservation policy documents and manuals exist. Many staff tend to regard preservation programs and conservation treatment as separate from other archival tasks, except as they identify specific items requiring conservation treatment when records arrive at the archives, when they are processed, or when they used for research. Beyond this haphazard identification of preservation needs, there are few concrete actions to meet them on the mass scale that is required.

On the average, only 37.2 percent of the holdings from the 43 reporting states are housed in acid-free boxes, a basic archival processing step. Four states mention an additional dimension of this problem when they estimate that although they have an average 80 percent of holdings in acid-free boxes, only 14 percent are in acid-free folders within these boxes. Only North Carolina houses 100 percent of its processed collection suitably, but it also reports a 12,000 cubic foot backlog of "unworked" records. Arizona alone reports a program for quality evaluation of archival supplies.

The state assessment reports, the survey questionnaire returns, and the project site visits dramatically document the scope of the state archives preservation crisis. The total volume of records receiving preservation treatment during the past five years, however the state archives define that treatment, is

less than the estimated annual accession rate into the state archives. More than 80 percent of the records accessioned into state archives each year, and in some states a much higher percentage, will never receive adequate preservation attention. State archives lack the trained staff, funds, facilities, and equipment to meet the preservation challenge. And at an even more fundamental level, archivists have not yet developed commonly accepted approaches and procedures for confronting the challenge.

This stack area exhibits good records storage conditions in a modern state archives facility.
Courtesy North Carolina Department of Archives and History

Strategic plans, increased resources, and a belief that we can overcome the crisis will start us on the way toward meeting the state archives preservation challenge. We need creative new program approaches, yet each state must also accept its own preservation challenge and responsibility to preserve its state archives. Unless we do this, our governmental documentary heritage will continue to disintegrate. To meet the state archives preservation challenge, we must begin. What follows are several approaches for that task.

BREAKING THE CYCLE OF POVERTY

In Documenting America Edwin C. Bridges draws an analogy between state archives and undeveloped countries trapped in a cycle of poverty.

> The picture of public records programs is one of inadequate resources which prevent state archives from mounting effective programs, while the lack of effective programs renders the archives vulnerable to disregard by departmental administrators and state budget officials. This cycle, too, seems to continue in endless repetition.[26]

If this is a valid analogy, then the strategies nations use to break the cycle of poverty may suggest a framework for state archives in addressing their preservation problems.[27] Typically these strategies include:

1) emphasis on long-term investment rather than short-term solutions;
2) a belief that the nation can achieve its goals through the continued efforts of its own people, and a well-developed communications network for sharing information;
3) development of a positive attitude toward change;
4) immediate emphasis on manpower development, even if short-term problems seem to dictate other priorities;
5) emphasis on quality; and
6) good plans, policies, and evaluation criteria which define and provide needed resources, determine goals, and seek alternative ways to achieve those goals.[28]

Since preservation is one of the two fundamental reasons for an archives (the other being to facilitate access to information the records contain), everything that occurs in an archives affects collection preservation. "In the broadest sense, the preservation of public or private records involves accessioning, processing, conserving, and storing materials."[29]

The most essential and fundamental preservation action that each state can take is to provide proper physical storage facilities, with modern fire detection and suppression capabilities, security controls, positive environmental conditions, and preservation-quality supplies for housing its state archives.

Nowhere can state archives make a better long-term commitment to preservation than to provide facilities with adequate storage space, security from fire and theft, and environmental conditions that minimize the destructive forces which cause archival records to deteriorate. The Public Archives of Canada study concludes that environmentally controlled storage is the most economical preventive preservation measure an archives can take.[30] Many state archives require drastic improvements in this area. While some states have or are constructing new state archives buildings, Bridges found particularly severe facility inadequacies in nearly half of the State Assessment Reports he reviewed.[31] In Arizona:

> The archives storage area . . . contains 4,700 cubic feet of records. There is no room for additional records, and the limited new acquisitions are either piled on the floor or shelved temporarily in an inappropriate location outside the Capitol Building. . . . Shades are drawn over these windows to prevent deterioration of the archives from the sun and to help reduce the intense summer heat. . . . The archives has no

> sprinkler system but it does have a fire hose with an outside hookup. . . . There is no area for the initial induction and fumigation of new materials.[32]

Utah's entire state archives are housed in a commercial warehouse. Nebraska reports that it "stores most of its holdings of local government records in leased warehouses lacking security and environmental controls."[33]

Because they require authoritative information to make appropriate and safe preservation decisions, archivists must support a program of national scope to develop and disseminate preservation information, standards and guidelines; evaluate existing treatments, techniques and procedures; and develop new preservation methods and conservation treatments.

"Standards should be written and promulgated for describing types and degrees of damage; control of temperature, humidity and light; quality of materials; control of workmanship; disaster preparedness; security from fire and water damage; protection against theft and vandalism; the ethics of records management; preservation workshops and other training," wrote George Cunha in Kentucky's State Assessment Report.[34] While some will question the need for "standards" in all these areas, the need for information on preservation applications in each is evident.

Some state archives have little space available to house new accessions.
Courtesy Utah State Archives

State archives staff feel uncertain about the appropriate application of some preservation tools and methods. Definitive, scientific conclusions will permit archivists and conservators to make sound decisions about particular preservation techniques or treatments. Specific tools and procedures that require further evaluation include: optical disk systems; various fumigation methods; "shrink-wrap" storage for bound volumes; methods of strengthening brittle paper; lamination; deacidification methods; and cold temperature storage. There is a need to reevaluate existing technical specifications for permanent and durable recording materials, write new specifications where necessary, and promulgate through nationally recognized authorities such as the American National Standards Institute appropriate preservation standards. First, however, is the need to set a national agenda for what research and development issues to address and in what sequence.

If archives are to solve the preservation problem, we must establish programs to educate archivists as preservation administrators and to train archives conservators and conservation technicians.

No state archives program will succeed without knowledgeable archivists and staff. Mississippi notes the "need for basic training in archival conservation administration. . . , [and] for the education of administrators, building supervisors, and the public in the area of conservation awareness."[35] As Moravcsik observes, shortage of trained personnel creates a bottleneck because training is a long-term affair no matter how much money one spends. Training must start immediately even if it appears that one should spend money on other, short-term problems.[36]

Staff in state archives cannot meet the preservation challenge without a significant improvement in all archival education and training, and specifically in the functional areas affecting preservation. The same holds true for other archivists and for conservators and conservation technicians wanting to specialize in conservation of documentary resources. Only Columbia University's School of Library Service currently offers a formal academic program exclusively oriented to documentary resources preservation, and that program is intended primarily to produce preservation administrators and conservators to work in research libraries. Archivists too must have opportunities to learn preservation administration strategies, techniques, and methodologies in greater depth than a single course or a one-day workshop can provide. This training should emphasize practical applications that deal with preservation on a series as well as an item level.

State archives need access to regional conservation centers as a cost-effective alternative for meeting restoration requirements and enhancing individual preservation program capabilities.

Shared access to conservation treatment facilities and conservation expertise can improve an institution's ability to meet its preservation needs. No state archives can afford a restoration program like those for the restoration of art and works-of-art on paper. Yet all archives require access to such expertise for restoring certain specific items which are valuable as artifacts. State archives should support, and use, existing regional conservation centers for restoration work and for certain other preservation treatments. A mass deacidification unit is an example of a shared resource that regional conservation centers can offer. Existing centers should actively seek funding support to provide such high-tech

services. Archives without access to regional centers ought to work cooperatively with library and museum professionals to establish them.

Preservation needs and costs require that state archives accession only records of permanent value. The exponential increase in records that modern government creates, and the variety of new formats on which information is being recorded, require reevaluation of traditional appraisal criteria.

The quality of information services an archives can provide depends, in large part, on the quality of the records that it accessions. Traditionally, state archives have been passive receivers of permanently valuable records produced by state government. With the proliferation of records, especially those in machine-readable format, this passive role no longer can -- if it ever could -- serve the purposes of adequately documenting the functions and activities of state government while protecting individual and collective rights.

State archivists must be concerned with the quality of documentation coming into state archives. The Committee on the Records of Government notes that the "quantity of modern records does not necessarily ensure proper documentation."[37] State archives should develop profiles for the types of documentation that have permanent value for recording the activities of government. They then must work with state agencies to ensure that these records are created on enduring, accessible media (to prevent future preservation problems), and are scheduled for accessioning into the state archives. In this process, state archives should seek to identify and fill gaps in the state's historical record. Such a proactive documentation strategy, however, requires that archivists reexamine the archival appraisal function.

Archivists determine whether governmental records should come to the state archives on the basis of continuing administrative, fiscal, legal, or research value. However, the ways state governments create, maintain, and manipulate information have changed radically in the past twenty years. Mainframe computers, stand-alone word processors, and now personal computers, often linked together in local area networks, create redundant and often transitory records systems. Moreover, the recording media are often unstable. State archives practices have yet to reflect these changes in government records systems. State archivists need to reconsider their appraisal criteria and selection techniques in order to cope with both the increased quantity of records that today's government generates and the new records-creating formats.[38]

The 43 states responding to the questionnaire declare that approximately 98 percent of current holdings are paper-based. Only five states report that their archives contain computer records in machine-readable format, material amounting to 39.5 cubic feet. They also report another 1,168.5 cubic feet of computer printouts. As Margaret Hedstrom cautions, "Unless we take some decisive action now, we can foresee the potential obliteration of significant portions of the historical record [the machine-readable part] simply because we lack the skills required to preserve it."[39]

New appraisal approaches will force government archivists to restructure preservation decision-making and redefine conservation treatment criteria. F. Gerald Ham notes:

> Archivists no longer deal with a scarcity of information, but rather are faced with an inundation of data, and our survival of this scourge depends upon our ability to bring order out of chaos and to give value to otherwise useless information.[40]

The Society of American Archivist's Joint Committee on Archives of Science and Technology has developed one model for archivists to use in reconsidering appraisal criteria and documentation strategies for government records.[41]

Only good archives management will produce quality preservation programs. Good management entails policy initiatives, strategic planning, setting program objectives, resource allocation, and evaluation. An essential prerequisite for each is development of planning tools to aid in preservation decision-making. A corollary is fostering mechanisms by which archives can exchange and use these tools imaginatively.

Sound, effective, efficient state archives management is the key to successful state archives preservation programs. Good management begins with appraisal and extends to all archival functions. Good management involves needs assessment, policy development, planning, program delineation, resource allocation, and evaluation of results. To carry out these activities archives must have good decision-making tools.

Of the 43 reporting states, only nine have developed a policy statement on preserving the state archives holdings. Twenty-three have a survey activity to determine preservation needs, but no state has analyzed its needs to the extent that the National Archives has.[42] State archives should test the NARA survey methodology to learn if other government archives can adopt National Archives program strategies to address the preservation challenge. Of the state archives receiving site visits, only California has attempted to develop a detailed cost analysis to determine the financial resources required to meet its preservation needs. Other states have defined parts of a preservation approach, such as cost estimates for new facilities, but most state archives

have no comprehensive preservation planning process.

In part this is because they lack preservation planning and evaluation tools. Automated program control and evaluation systems that include information on preservation status, priority, and need would help. These systems exist in concept but must be further defined, tested, implemented, and evaluated. Sampling techniques for determining preservation and resource allocation requirements also exist, but need further refinement and testing before archives can integrate them into the planning process. In pursuing preservation objectives, archivists should take full advantage of techniques, resources, and tools developed in the library profession. The archives community could, for example, adapt to its own purposes the Preservation Self-Study Program developed by the Association of Research Libraries.[43]

State archives must further their professional and program development through imaginative interchanges of research and talent at all levels. Historically, state archives have functioned in isolation from one another, stressing the uniqueness of their programs. It is apparent, however, as computer-assisted information systems begin to link archives together bibliographically that state archives share many concerns among themselves and with other archivists. In the area of preservation, a concrete first step can be development of planning tools. Yet for archives to work together successfully, a responsible agency must ensure the interchange of preservation information. The National Archives might fill this role.

The processing backlog problem in state archives is critical and must be addressed immediately.

Most state archives have in their custody an enormous backlog of materials requiring basic archival processing. Archival storage, as the Public Archives of Canada emphasizes, "goes beyond environmentally controlled facilities. It includes the maintenance of collections through proper boxing and use of appropriate storage modes."[44]

Basic archival processing -- what the National Archives calls "holdings maintenance" -- includes the following tasks: fumigating; reboxing; refoldering; removing paper clips, staples, elastic bands, and other foreign objects; final weeding; making emergency repairs; and labeling or relabeling containers.[45] Overwhelmed by these backlogs, many state archives often accession government records in their current boxes and folders, storing them on the shelf as is. Not one state archives reports that all its holdings are properly housed. To cite one example, a Kentucky staff member estimates that 75 percent of current holdings need additional processing. To make matters worse, Iowa notes that "increased patron demand is beginning to hamper the present staff capabilities to handle even the most routine archival management, description, and conservation functions."[46]

Many of the records already in state archives require further processing.
Courtesy Delaware Bureau of Archives and Records Management

Microfilm remains the most viable mass preservation tool, along with adequate archival storage conditions, currently available for archives to use in preserving information from their holdings. A program to ensure the quality of microfilm produced in each state archives is essential. Resources must be provided to significantly increase the quantity and quality of preservation microfilm projects which state archives undertake.

All 43 states responding to the survey questionnaire, except Idaho, Montana, and Rhode Island, report they use microfilm to preserve information in state archives. Microfilm has been used extensively in archives preservation activity since the 1930s.[47] Yet it too presents preservation concerns as the Arizona State Assessment Report notes:

> Microfilming of historical records is a valuable tool for preserving originals from mishandling, deterioration and theft; it provides greater efficiency and ease of use of materials by researchers. However, microfilm at this time (especially filming done in the past and stored under nonarchival conditions), cannot necessarily be viewed as a long-term, permanent record. . . .[48]

Despite past deficiencies in some archives preservation microfilming programs, microfilm remains a viable, usable preservation tool. Microfilming preserves the information in documentary resources on a mass scale. User copies of the film can save wear and tear on fragile original documents. Microfilm also facilitates research by making the information available in multiple locations at the same time. This dispersion provides additional security against loss of information should a disaster damage the original records. ANSI and AIIM specifications can

be, and are, achieved in preservation microfilming efforts such as that of the Research Libraries Group.[49] State archives must improve their preservation microfilming programs.

A COOPERATIVE NATIONAL APPROACH TO PRESERVATION

Comprehensive and systematic programs to solve state archives preservation problems must begin, and they must begin now. The need is both critical and immediate. These programs will require a significant commitment of new resources from the individual states, the federal government, and the private sector.

Each archives requires a comprehensive preservation program with a decision-making framework that: determines preservation priorities; balances preventive preservation measures with selected conservation repair, preservation reprography, and restoration treatments; and effectively applies the available array of preservation tools and approaches to assure treatment of intrinsically valuable records and preservation of information of enduring value in records without value as artifacts. The nature and massive scale of the preservation problem in state archives necessitates a coordinated, cooperative partnership among state and federal government agencies, public and private granting institutions and foundations, and the corporate sector of society.

The federal government has an obligation to assist state archives in managing the preservation crisis. Many records in state archives were created to meet recording requirements mandated by federal programs. Yet these federal programs never provided resources for effective management and preservation of program records. A more compelling reason for the federal government and for the private sector to help state archives with their preservation programs is the value of these records for historical and other research. The records in state archives have national as well as local significance and are a public resource for all the people of the United States.

The first steps NAGARA proposes spans a ten-year period. These recommendations offer a cost-effective program to attack some of the root problems that archives face in preserving our documentary heritage. Not simply a one-time reaction, these recommendations can provide long-term solutions. The projected costs of each program are estimates only. Each requires more work and study to develop detailed, firm program proposals and identify specific organizations, institutions, and funding vehicles for undertaking the work.

Assumptions

The elements suggested here for a national approach to the state archives preservation problem rest on several assumptions, the most fundamental of which is the critical, immediate need to solve the preservation problem:

1) preservation of state archives is in the public interest;
2) preservation of state archives is primarily a state responsibility with the federal government's role being to provide incentives, underwrite research and development, stimulate cooperative approaches, and assist in the elimination of records preservation processing backlogs which in many cases accumulated before viable state programs were created;
3) a majority of the holdings in state archives will be adequately preserved once they are housed in proper environmental storage conditions and receive basic archival preparation;

4) preservation approaches and technologies should focus on preserving information, not the physical media on which that information was originally recorded;

5) apart from providing for proper environmental and housing conditions, a significant portion of current resources committed to preservation should be used for preservation microfilming since it is the one mass technique widely available and for which quality standards exist;

6) the National Archives must assume a leadership role in developing solutions to shared government archives problems, including preservation;

7) the initial and primary emphasis of the state archives preservation effort should focus on proper environmental and housing conditions -- preventive maintenance and phased preservation -- including planning and preservation program evaluation;

8) trained staffs are essential to preservation program success;

9) state archives preservation needs are similar to those other archives face and solving state archives preservation problems will aid in meeting the preservation needs of all archives; and

10) grant support for state archives preservation efforts should focus on specific achievable projects that have wide benefits and objectives that can be met within a specific timeframe.

Proposed Areas for Program Development

Preservation Planning

As a first step in meeting the preservation challenge, each state archives must assess its preservation needs.

Program Title -- Preservation Survey and Data Analysis
Time Frame -- 1987-1988
Cost -- $150,000

Federal funds of $25,000 should first go to adapt or design a preservation survey instrument that state archives can easily apply to preservation planning. An archives self-study program package similar to that developed by the Association of Research Libraries can be created using the NARA survey methodology as a point of departure. Then federal planning grants of up to $2,500 each should be made available to each state archives to conduct this self-study and create its individual preservation agenda and long-range plan for coping with defined preservation deficiencies.

Facilities Improvements

State archives buildings in many states are severely deficient in quality and amount of storage space available to preserve state records of enduring value.

Program Title -- Facilities Needs Analysis and Planning

Time Frame -- 1987-1988

Cost -- $500,000

Grant funds of up to $10,000 for each state archives should be made available for engineering, architectural, and facilities studies preparatory to either new construction or to expanding and upgrading existing state archives buildings. These plans should focus on providing adequate, environmentally controlled, secure storage facilities into the 21st century. Building such facilities constitutes the single most beneficial action a state can take to ensure the long-term preservation of its state archives.

Program Title -- State Archives Facilities Improvement

Time Frame -- 1988-1996

Cost -- $75,000,000

Competitive challenge grants on a minimum three-to-one matching basis to a maximum of $2 million each should be made available for states to build, expand, or upgrade existing state archives facilities in accordance with engineering and architectural studies. These studies should be an essential prerequisite to participation in this program.

State Archives Staff Enhancement

To meet the preservation challenge we must educate and train archives personnel in preservation administration and conservation techniques.

Program Title -- Preservation Education and Skills Development
Time Frame -- 1987-1989
Cost -- $375,000

Presently Columbia University offers the nation's only formal academic program which begins to address archives preservation education and training needs. Federal and foundation financial support of $25,000 should be made available to each of four employees of state archives in each of three years (for a total of twelve employees) to enable them to enroll in the Columbia program. For its part, the Columbia University faculty should work with a joint Society of American Archivists/NAGARA advisory committee to design specific curriculum components for both archives preservation administrators and archives conservators.

Concurrent with this effort should be an archives preservation institute program lasting for two to three weeks. This institute would provide archivists at the middle-management level with an intensive introduction to the basics of archives preservation administration. Approximately twenty archivists from all types of archival repositories would attend each of three annual sessions (for a total of sixty participants). Employing institutions would support part of the cost for staff to attend these preservation institutes with $25,000 annually from other funding sources for core program support.

Regional Conservation Centers

Services that regional conservation centers offer enhance and support preservation programs in individual archival repositories.

Program Title -- Regional Conservation Center Support

Time Frame -- 1987-1996

Cost -- $2,500,000

Using the specialized conservation personnel, equipment, and facilities of regional conservation centers can help archives meet expensive restoration and conservation treatment needs they require on a selective and infrequent basis. Sharing expertise must be part of a national approach to both library and archives conservation. Federal and foundation funds should be made available to expand existing regional conservation center programs so they can address archives restoration needs in particular and purchase hardware systems to use on a shared basis. Funds should also provide start-up support for new regional conservation centers in areas of the United States where they do not yet exist.

Reprography

A significant mass of state archives holdings can be cost-effectively preserved by reformatting on a more stable medium.

Program Title -- Preservation Reprography
Time Frame -- 1987-1996
Cost -- $20,000,000

Today microfilming remains the best technique for transferring masses of information of enduring value to a more durable and permanent format, although optical disk technology seems to hold promise for the future. Based on the state archives long-range plan, grants of up to $40,000 each for a ten-year period on at least a one-to-one matching basis should be made available to support state archives reprography projects.

Holdings Maintenance

Approximately 62 percent of all state archives holdings require either initial processing or reprocessing to meet basic archival preservation requirements. This backlog creates a significant problem for state archives.

Program Title -- Archival Holdings Maintenance

Time Frame -- 1988-1996

Cost -- $25,000,000

Based on long-range plans developed from the preservation planning studies, grants of up to $50,000 each for a ten-year period on at least a three-to-one matching basis should be made available to each state archives to process, or reprocess, existing holdings to meet archival holdings maintenance requirements. Although intellectual control over holdings is a component of archival processing, this program must focus on physical housing and basic conservation treatment for materials that the preservation planning study has given preservation priority.

Research and Development

Research on, and development of, new preservation and conservation tools and on-going evaluation of existing approaches and procedures are essential to meeting the archives preservation challenge.

Program Title -- Preservation Research and Development

Time Frame -- 1987-1996

Cost -- $10,000,000

The National Archives and Records Administration should conduct this laboratory-based research and development initiative because it: has preservation problems to solve that are similar to those in other archives; has the capacity

both to undertake research and development activities in-house and to contract for additional research and development work (and must do so to meet its own requirements); has mechanisms to disseminate information; and has expressed interest in working closely with the states and sharing its expertise. NARA would coordinate this program with research and development efforts at the Library of Congress, the National Institute for Conservation, and other preservation research groups. In addition, the archives profession should stimulate private-sector activity in these areas, in part by subsidizing research projects that fit into national preservation research priorities. Research and development projects should address both prospective and retrospective archives preservation requirements.

Committee for Archives Preservation

The success of the archives preservation effort in this country depends on archivists resolving several issues. State archivists, for example, must establish adequate documentation standards for state government functions, apply those standards to records created in new recording formats, and provide programs to meet the differing research uses for state government records, to name but three besides basic preservation planning and establishing collective preservation priorities.

Program Title -- Committee for Archives Preservation

Time Frame -- 1987-1991

Base Cost -- $625,000

[Note: Additional funds to support specific projects and programs would be generated separately from this general support base].

Funds should be made available to establish and maintain for five years a staffed Committee for Archives Preservation. Structurally the Committee might function within an existing organization such as Society of American Archivists or NAGARA, or it might exist as a separate entity.

The committee NAGARA President Lew Bellardo convened in Washington on 10-11 December 1985 might serve as the Committee's initial members. Its core mandate would be to provide programs and support activities for the exchange of information and staff expertise among all archival institutions to address the preservation problems raised in this study. A core issue will be to define minimal standards for an archives preservation program. Another is to develop a national preservation research agenda.

CONCLUSION

The preservation needs in the nation's state archives are significant, both in scope and merit, but state resources to meet them remain inadequate. Yet state archives preservation is not simply fifty individual issues. It is a national issue. It requires collective as well as individual effort and resources for its resolution. Successfully addressing the state archives preservation challenge will also help all archival repositories. As leaders of the archival community in their respective states, the fifty state archives will develop and improve preservation tools, procedures, and practices which all archives can adopt or adapt to meet the preservation challenge that all face.

NAGARA estimates the cost of its recommended program to support state archives preservation efforts over the next decade at $134,150,000.[50] Such an investment from non-state sources will provide the essential support for initial steps toward

The reason for preserving state archives is to allow access, now and in the future.
Courtesy North Carolina Department of Archives and History.

meeting state archives preservation needs. In those few states that have traditionally supported state archives preservation programs, this program will build on a solid foundation. In others it will provide a start. States must appropriate or otherwise obtain a minimum $337,650,000 in additional funding to take full advantage of NAGARA's proposal.

The National Association of Government Archives and Records Administrators believes that now is time to meet the preservation challenge in the nation's state archives. C. Northcote Parkinson once said that delay was the deadliest form of denial. His observation applies most particularly to preservation. If we delay action now, we abrogate our responsibility for the cultural resources we have inherited and deny future generations of Americans access to their rightful documentary heritage.

ENDNOTES

[1]Conservation Program Evaluation Study. (Ottawa: Public Archives of Canada, Program Evaluation Office, September, 1985), 29.

[2]H.G. Jones, The Records of a Nation: Their Management, Preservation and Use. (New York: Atheneum, 1969), 24.

[3]Gordon Williams, "The Preservation of Deteriorating Books," Library Journal. 91 (1 January and 15 January 1966), 51-56; 189-194.

[4]Edwin E. Williams, "Deterioration of Library Collections Today," Library Quarterly. 40 (January, 1970), 3.

[5]Frederick W. Byrd, "Library Treasures Eaten Away by Time, Pollution," The Sunday Star-Ledger. 1 October 1984, 1.

[6][Unpublished Report]. Robert DeCandido. "United States History, Local & Genealogy Pilot Condition Survey Report." (New York: New York Public Library, 1983[?]).

[7]Alan Calmes, National Archives and Records Service (NARS) Twenty Year Preservation Plan. Washington: National Archives and Records Service [now the National Archives and Records Administration], November 1984. 9; 16.

[8]Ibid., 3-4.

[9]Ibid., 5.

[10]Ibid., 17.

[11]Telephone conversation with Alan Calmes, 21 March 1985.

[12][Kentucky]. Historical Records Needs Assessment: Final Report. 15.

[13][Nebraska]. Final Report: Needs Assessment and Reporting Grant. 9.

[14]Historical Records in Massachusetts: Prospects, Programs & Plans. 54.

[15]Preserving Arizona's Historical Records: Final Report, 1983. 24.

[16]Public and Private Record Repositories in Virginia: A Needs Assessment Report. 22-23.

[17]Historical Records in Minnesota. 6; Archives and Records Program in North Carolina: An Analysis of Present Problems and Future Needs: Final Report, 1983. 7.

[18][New York]. Toward a Usable Past: Historical Records in the Empire State. 67.

[19]Edwin C. Bridges, "Consultant Report: State Government Records Programs," in Documenting America: Assessing the Condition of Historical Records in the States ed. by Lisa B. Weber. (Atlanta: National Association of State Archives and Records Administrators, 1984), 7-8.

[20]States not returning the questionnaire were: Colorado, Florida, Indiana, Maine, Massachusetts, Missouri, New Mexico, Wisconsin, and Wyoming. Information on the Wisconsin program was taken from the 1983-1984 state archives annual report.

[21]This translates to $18.41 for each cubic foot of records and one FTE for every 1,578 cubic feet of archives holdings.

[22]This translates to 30.4 percent of available staff positions and 9.9 percent of available state archives appropriations to support "preservation."

[23]Bridges, Documenting America. 7.

[24]Available from the Association of Image and Information Management, 1100 Wayne Avenue, Silver Spring, Maryland 20910, and American National Standards Institute, 1430 Broadway, New York, New York 10018.

[25]American National Standards Institute PH 1.43-1981 or latest revision. Practice for Storage of Processed Safety Photographic Film.

[26]Bridges, Documenting America. 8.

[27]I am indebted to Ellen McCrady, editor of The Abbey Newsletter, for suggesting this line of inquiry.

[28]Michael J. Moravcsik, Science Development: The Building of Science in Lesser Developed Countries. 2nd ed. (Bloomington: Consortium for International Activities, 1976).

[29]Planning to Preserve Wisconsin's History: The Archival Perspective. 17.

[30]Conservation Program Evaluation Study. 31.

[31]Bridges. Documenting America. 10.

[32]Preserving Arizona's Historical Records. 16.

[33][Nebraska]. Final Report. 18.

[34][Kentucky] Historical Records Assessment Project. 45.

[35]The Management and Preservation of Mississippi's Historical Records: Problems and Potential. Vol. 1. 47.

[36]Moravcsik. Science Development. 41-42.

[37]Committee on the Records of Government: Report. (Washington: Committee on the Records of Government, March, 1985), 20.

[38]For additional background on computer records and archival issues, see: Committee on the Records of Government: Report, 24-34.

[39]Margaret L. Hedstrom. Archives and Manuscripts: Machine-Readable Records. Basic Manual Series. (Chicago: Society of American Archivists, 1984), 7.

[40]Ham, "Planning for the Archival Profession," American Archivist 48 (Winter 1985), 26.

[41]Clark A. Elliott, ed. Understanding Progress as Process: Final Report of the Joint Committee on Archives of Science and Technology. (Chicago: Society of American Archivists, 1984).

[42]Calmes. National Archives and Records Services (NARS) Twenty Year Preservation Plan.

[43]Pamela W. Darling with Duane E. Webster. Preservation Planning Program: An Assisted Self-Study Manual for Libraries. (Washington: Association of Research Libraries, 1982); Darling, comp. Preservation Planning Program: Resource Notebook. (Washington: Association of Research Libraries, 1982).

[44]Conservation Program Evaluation Study. 30.

[45]State Archives Terminology, Measurement and Reporting Standards. Albany: National Association of State Archives and Records Administrators, 1982 (reprinted in 1984), I-2.

[46]Iowa's Historical Records. 7.

[47]Clifton Dale Foster, "Microfilming Activities of the Historical Records Survey, 1935-42," American Archivist 48 (Winter, 1985), 45-55.

[48]Preserving Arizona's Historical Records. 8.

[49]RLG Preservation Manual. (Stanford, CA: Research Libraries Group, Inc., 1983).

[50]The proposed support needed from nonstate sources over a ten year period equals approximately what the United States Government spends in one and one-quarter hours.

APPENDIX

STATISTICAL DATA

The tables which follow show data on state archives programs and activities in the 43 states that responded to the NAGARA Preservation Study Project Questionnaire.

Information was requested for the state archives function only, and the data was confirmed with each state prior to its use in this project. However, differences in terminology and reporting formats from state to state suggest that the reader should take extreme care when comparing data from different states to ensure that reporting units are indeed consistent and comparable.

Taken as a whole, the tables provide a valid composite view of preservation resources, problem areas, programs, and trends in the Nation's state archives.

NOTE: In the following tables, "?" means that data could not be supplied. "NR" means that the state archives agency failed to return the questionnaire. "NA" means the operation is not applicable to the specific state program.

NAGARA PRESERVATION STUDY
ADMINISTRATIVE INFORMATION

State	State Archives Budget	Preservation Budget	State Archives FTE's	Preservation FTE's
ALABAMA	449500	146500	17.00	0.33
ALASKA	750700	0	9.00	0.00
ARIZONA	105090	51850	5.00	2.00
ARKANSAS	701312	200000	20.00	7.00
CALIFORNIA	688837	58326	17.00	2.00
COLORADO	NR	NR	NR	NR
CONNECTICUT	?	?	2.00	2.00
DELAWARE	210000	9200	12.00	0.00
FLORIDA	325000	54300	16.50	3.00
GEORGIA	3350000	318000	81.00	2.00
HAWAII	404274	7385	21.00	0.00
IDAHO	?	?	?	0.00
ILLINOIS	873000	49700	21.00	2.25
INDIANA	NR	NR	NR	NR
IOWA	89000	2500	4.00	0.00
KANSAS	180602	0	7.00	0.00
KENTUCKY	250000	66523	13.00	3.00
LOUISIANA	1000000	4500	43.00	2.00
MAINE	NR	NR	NR	NR
MARYLAND	982330	141732	24.00	3.00
MASSACHUSETTS	NR	NR	NR	NR
MICHIGAN	230000	3500	6.00	0.00
MINNESOTA	397130	110000	13.75	1.70
MISSISSIPPI	81737	18614	4.25	0.60
MISSOURI	89700	19150	7.00	0.00
MONTANA	150390	0	5.00	0.00
NEBRASKA	306149	16575	3.50	0.50
NEVADA	115810	0	2.50	0.00
NEW HAMPSHIRE	27000	1750	1.00	0.00
NEW JERSEY	92000	10000	7.50	0.00
NEW MEXICO	NR	NR	NR	NR
NEW YORK	681900	165262	24.00	6.00
NORTH CAROLINA	1570545	?	75.00	4.00
NORTH DAKOTA	83000	1500	3.25	0.10
OHIO	101000	2000	4.00	0.20
OKLAHOMA	126204	?	5.00	1.00
OREGON	647000	0	18.00	0.00
PENNSYLVANIA	?	18000	17.00	0.25
RHODE ISLAND	24000	5000	1.00	0.00
SOUTH CAROLINA	775000	90000	42.00	7.00
SOUTH DAKOTA	124000	150	4.00	0.00
TENNESSEE	268631	55000	12.00	2.00
TEXAS	449712	51320	18.00	2.00
UTAH	323854	46566	8.00	0.00
VERMONT	47300	4100	2.00	0.10
VIRGINIA	520450	20700	7.50	0.00
WASHINGTON	75000	15000	3.00	1.00
WEST VIRGINIA	75000	0	4.00	0.00
WISCONSIN	NR	NR	NR	3.00
WYOMING	NR	NR	NR	NR
** TOTAL **	17742157	1764703	610.75	58.03

FACILITIES INFORMATION

State	Environmental Controls (Temperature)	Environmental Controls (Relative Humidity)	Environmental Controls Function Satisfactory
ALABAMA	N	N	N
ALASKA	Y	N	N
ARIZONA	N	N	N
ARKANSAS	N	N	N
CALIFORNIA	N	N	N
COLORADO	NR	NR	NR
CONNECTICUT	Y	N	N
DELAWARE	N	N	N
FLORIDA	Y	Y	Y
GEORGIA	N	N	N
HAWAII	N	N	N
IDAHO	N	N	N
ILLINOIS	Y	Y	Y
INDIANA	NR	NR	NR
IOWA	N	N	N
KANSAS	N	N	N
KENTUCKY	Y	Y	Y
LOUISIANA	Y	Y	N
MAINE	NR	NR	NR
MARYLAND	Y	Y	N
MASSACHUSETTS	NR	NR	NR
MICHIGAN	N	N	N
MINNESOTA	N	N	N
MISSISSIPPI	Y	Y	Y
MISSOURI	N	N	N
MONTANA	N	N	N
NEBRASKA	N	N	N
NEVADA	Y	Y	N
NEW HAMPSHIRE	Y	Y	Y
NEW JERSEY	N	N	N
NEW MEXICO	NR	NR	NR
NEW YORK	N	N	N
NORTH CAROLINA	Y	Y	Y
NORTH DAKOTA	Y	Y	Y
OHIO	Y	N	N
OKLAHOMA	Y	Y	N
OREGON	N	N	N
PENNSYLVANIA	Y	Y	N
RHODE ISLAND	N	N	N
SOUTH CAROLINA	Y	Y	Y
SOUTH DAKOTA	N	N	N
TENNESSEE	Y	Y	N
TEXAS	Y	N	N
UTAH	N	N	N
VERMONT	Y	Y	Y
VIRGINIA	Y	Y	N
WASHINGTON	Y	Y	N
WEST VIRGINIA	Y	N	N
WISCONSIN	NR	NR	NR
WYOMING	NR	NR	NR

FACILITIES INFORMATION

State	Disaster Plan	Fire Detection System	Fire Suppression System	Security System
ALABAMA	N	Y	N	Y
ALASKA	N	Y	Y	Y
ARIZONA	Y	Y	N	N
ARKANSAS	N	Y	Y	Y
CALIFORNIA	Y	Y	N	Y
COLORADO	NR	NR	NR	NR
CONNECTICUT	Y	Y	Y	Y
DELAWARE	N	Y	Y	Y
FLORIDA	N	Y	N	Y
GEORGIA	N	Y	N	Y
HAWAII	N	N	N	Y
IDAHO	Y	Y	N	Y
ILLINOIS	Y	Y	N	Y
INDIANA	NR	NR	NR	NR
IOWA	N	N	N	N
KANSAS	N	Y	N	Y
KENTUCKY	Y	Y	Y	Y
LOUISIANA	Y	Y	Y	Y
MAINE	NR	NR	NR	NR
MARYLAND	N	Y	Y	Y
MASSACHUSETTS	NR	NR	NR	NR
MICHIGAN	N	N	Y	Y
MINNESOTA	N	Y	Y	Y
MISSISSIPPI	Y	Y	N	N
MISSOURI	N	N	Y	Y
MONTANA	N	Y	Y	Y
NEBRASKA	Y	N	N	Y
NEVADA	N	N	Y	Y
NEW HAMPSHIRE	N	Y	N	Y
NEW JERSEY	N	N	N	Y
NEW MEXICO	NR	NR	NR	NR
NEW YORK	N	Y	N	Y
NORTH CAROLINA	Y	Y	N	Y
NORTH DAKOTA	N	Y	Y	Y
OHIO	N	Y	N	Y
OKLAHOMA	Y	N	Y	Y
OREGON	N	N	Y	N
PENNSYLVANIA	Y	Y	Y	Y
RHODE ISLAND	N	N	N	N
SOUTH CAROLINA	N	Y	N	N
SOUTH DAKOTA	Y	Y	N	Y
TENNESSEE	N	Y	N	N
TEXAS	N	N	N	N
UTAH	Y	N	Y	Y
VERMONT	Y	N	N	N
VIRGINIA	N	Y	N	Y
WASHINGTON	Y	Y	N	Y
WEST VIRGINIA	N	Y	N	Y
WISCONSIN	NR	NR	NR	NR
WYOMING	NR	NR	NR	NR

SPACE AND FUNDS NEEDED

State	Space Available (Cu. Ft.)	Funds Required (Dollars)
ALABAMA	56000	500000
ALASKA	10000	?
ARIZONA	0	30000
ARKANSAS	4000	?
CALIFORNIA	500	356500
COLORADO	NR	NR
CONNECTICUT	10000	?
DELAWARE	0	?
FLORIDA	15000	1000000
GEORGIA	9000	?
HAWAII	1330	?
IDAHO	?	?
ILLINOIS	15000	1800000
INDIANA	NR	NR
IOWA	5000	?
KANSAS	100	?
KENTUCKY	17558	7790000
LOUISIANA	100	50000
MAINE	NR	NR
MARYLAND	0	1195000
MASSACHUSETTS	NR	NR
MICHIGAN	500	500000
MINNESOTA	3000	765000
MISSISSIPPI	200	124998
MISSOURI	1483	NR
MONTANA	6050	250000
NEBRASKA	1000	325000
NEVADA	1233	50000
NEW HAMPSHIRE	85	50000
NEW JERSEY	0	650000
NEW MEXICO	NR	NR
NEW YORK	2000	1000000
NORTH CAROLINA	5000	?
NORTH DAKOTA	3600	200000
OHIO	300	625000
OKLAHOMA	2000	?
OREGON	1000	130000
PENNSYLVANIA	40750	?
RHODE ISLAND	0	58000
SOUTH CAROLINA	5700	?
SOUTH DAKOTA	0	20000
TENNESSEE	?	542000
TEXAS	0	12000000
UTAH	7000	10250000
VERMONT	500	170000
VIRGINIA	0	256000
WASHINGTON	0	120000
WEST VIRGINIA	3500	?
WISCONSIN	NR	NR
WYOMING	NR	NR
** TOTAL **	228489	40807498

HOLDINGS INFORMATION

State	Holdings (Cu. Ft.)	Accessions Rate (Cu. Ft.)	Unbound Documents (Cu. Ft.)	Bound Documents (Cu. Ft.)
ALABAMA	21648.00	972.50	15726.00	5439.00
ALASKA	3607.00	0.00	3150.00	123.00
ARIZONA	5100.00	150.00	4000.00	1100.00
ARKANSAS	6000.00	0.00	2000.00	1500.00
CALIFORNIA	55000.00	2000.00	45321.00	7997.00
COLORADO	NR	NR	NR	NR
CONNECTICUT	23400.00	800.00	?	?
DELAWARE	15000.00	200.00	10000.00	5000.00
FLORIDA	27350.00	2000.00	26000.00	93.60
GEORGIA	85000.00	3000.00	72000.00	12000.00
HAWAII	9199.00	200.00	7146.00	2053.00
IDAHO	7000.00	200.00	6000.00	1000.00
ILLINOIS	60000.00	900.00	41580.00	17820.00
INDIANA	NR	NR	NR	NR
IOWA	16200.00	?	11000.00	4600.00
KANSAS	12000.00	500.00	11500.00	500.00
KENTUCKY	79100.00	6500.00	54444.00	24656.00
LOUISIANA	15000.00	150.00	10000.00	5000.00
MAINE	NR	NR	NR	NR
MARYLAND	72798.00	5000.00	67629.00	5169.00
MASSACHUSETTS	NR	NR	NR	NR
MICHIGAN	15000.00	1200.00	9750.00	5250.00
MINNESOTA	37000.00	3000.00	?	?
MISSISSIPPI	6919.00	80.00	5550.00	1100.00
MISSOURI	10605.00	300.00	6717.00	1833.00
MONTANA	10000.00	500.00	3250.00	1750.00
MONTANA	6250.00	250.00	3000.00	3250.00
NEVADA	5186.00	100.00	4810.00	314.00
NEW HAMPSHIRE	2850.00	75.00	2500.00	350.00
NEW JERSEY	11000.00	150.00	10100.00	900.00
NEW MEXICO	NR	NR	NR	NR
NEW YORK	40000.00	3500.00	31000.00	8000.00
NORTH CAROLINA	30500.00	1500.00	29000.00	1200.00
NORTH DAKOTA	7000.00	700.00	6700.00	300.00
OHIO	9652.00	400.00	5933.00	3186.00
OKLAHOMA	23098.00	800.00	21933.00	800.00
OREGON	21000.00	1000.00	22370.00	1525.00
PENNSYLVANIA	28000.00	600.00	9520.00	18480.00
RHODE ISLAND	1800.00	0.00	200.00	1000.00
SOUTH CAROLINA	15000.00	420.00	13500.00	?
SOUTH DAKOTA	3000.00	?	2250.00	750.00
TENNESSEE	15400.00	250.00	?	?
TEXAS	26171.00	0.00	20000.00	5800.00
UTAH	22530.00	500.00	20000.00	500.00
VERMONT	700.00	75.00	550.00	56.00
VIRGINIA	27535.00	1500.00	14150.00	14280.00
WASHINGTON	35000.00	2000.00	30000.00	4600.00
WEST VIRGINIA	6425.00	175.00	4046.00	1172.00
WISCONSIN	32479.00	1628.50	NR	NR
WYOMING	NR	NR	NR	NR
** TOTAL **	963502.00	43276.00	664325.00	170446.60

HOLDINGS INFORMATION

State	Microfilm (Rolls)	Microfiche	Audio Tapes (Cu. Ft.)	Video Tapes (Cu. Ft.)
ALABAMA	3600	2155	NR	1.00
ALASKA	300	1000	200.00	100.00
ARIZONA	8190	0	0.00	0.00
ARKANSAS	75000	550	0.00	0.00
CALIFORNIA	1620	550	20.00	4.00
COLORADO	NR	NR	NR	NR
CONNECTICUT	4282	0	2.00	0.00
DELAWARE	4000	25	50.00	5.00
FLORIDA	58000	2600	403.00	90.00
GEORGIA	54000	11000	5.00	5.00
HAWAII	22748	2543	20.75	1.25
IDAHO	0	0	0.00	0.00
ILLINOIS	5040	0	10.00	0.00
INDIANA	NR	NR	NR	NR
IOWA	550	50	0.00	0.00
KANSAS	4500	300	0.00	0.00
KENTUCKY	32484	2500	15.00	13.00
LOUISIANA	12600	0	6.00	1.00
MAINE	NR	NR	NR	NR
MARYLAND	22000	25000	33.33	0.50
MASSACHUSETTS	NR	NR	NR	NR
MICHIGAN	5000	0	27.75	0.00
MINNESOTA	6833	3797	12.00	0.00
MISSISSIPPI	468	0	12.00	24.00
MISSOURI	6156	2200	2.00	0.00
MONTANA	2500	100	35.25	0.00
MONTANA	16678	1000	10.00	0.00
NEVADA	1139	84	32.00	0.00
NEW HAMPSHIRE	1620	550	2.00	0.00
NEW JERSEY	13320	550	65.00	1.00
NEW MEXICO	NR	NR	NR	NR
NEW YORK	2700	0	10.00	20.00
NORTH CAROLINA	29000	0	150.00	10.00
NORTH DAKOTA	4150	0	2.00	2.00
OHIO	4500	0	16.00	4.00
OKLAHOMA	3048	11	56.00	27.00
OREGON	23580	2035	0.00	0.00
PENNSYLVANIA	8000	0	2.00	6.00
RHODE ISLAND	0	0	0.00	0.00
SOUTH CAROLINA	16200	100	10.00	2.00
SOUTH DAKOTA	550	0	4.25	1.50
TENNESSEE	2032	0	642.00	0.00
TEXAS	1260	138	10.00	0.50
UTAH	72000	16900	1.50	0.00
VERMONT	0	0	12.00	0.00
VIRGINIA	85889	46200	0.00	5.40
WASHINGTON	50000	11000	416.50	0.00
WEST VIRGINIA	24685	36750	34.00	70.00
WISCONSIN	7390	33855	NR	NR
WYOMING	NR	NR	NR	NR
** TOTAL **	697612	203543	2329.33	394.15

HOLDINGS INFORMATION

State	Phonograph Records (Cu. Ft.)	Optical Disks (Cu. Ft.)	Disk Packs (Cu. Ft.)	Computer Tapes (Cu. Ft.)
ALABAMA	0.00	0	0	14.00
ALASKA	1.00	0	0	0.00
ARIZONA	0.00	0	0	0.00
ARKANSAS	0.00	0	0	0.00
CALIFORNIA	2.00	0	0	1.00
COLORADO	NR	NR	NR	NR
CONNECTICUT	0.00	0	0	0.00
DELAWARE	0.00	0	0	0.00
FLORIDA	1.00	0	0	0.00
GEORGIA	1.00	0	0	0.00
HAWAII	1.00	0	0	0.00
IDAHO	0.00	0	0	0.00
ILLINOIS	4.00	0	0	0.00
INDIANA	NR	NR	NR	NR
IOWA	0.00	0	0	0.00
KANSAS	0.00	0	0	0.00
KENTUCKY	1.00	0	0	0.00
LOUISIANA	1.00	0	0	0.00
MAINE	NR	NR	NR	NR
MARYLAND	0.00	0	0	0.00
MASSACHUSETTS	NR	NR	NR	NR
MICHIGAN	0.50	0	0	0.00
MINNESOTA	1.00	0	0	0.00
MISSISSIPPI	0.00	0	0	0.00
MISSOURI	0.00	0	0	0.00
MONTANA	0.00	0	0	0.00
MONTANA	0.00	0	0	0.00
NEVADA	0.00	0	0	0.00
NEW HAMPSHIRE	0.00	0	0	0.00
NEW JERSEY	5.00	0	0	0.00
NEW MEXICO	NR	NR	NR	NR
NEW YORK	0.00	0	0	0.00
NORTH CAROLINA	500.00	0	0	0.00
NORTH DAKOTA	0.00	0	0	0.00
OHIO	2.00	0	0	0.00
OKLAHOMA	0.00	0	0	0.00
OREGON	0.00	0	0	7.50
PENNSYLVANIA	1.00	0	0	0.00
RHODE ISLAND	0.00	0	0	0.00
SOUTH CAROLINA	0.00	0	0	2.00
SOUTH DAKOTA	0.00	0	0	0.00
TENNESSEE	212.50	0	0	0.00
TEXAS	0.50	0	0	0.00
UTAH	0.00	0	0	0.00
VERMONT	0.00	0	0	0.00
VIRGINIA	1.00	0	0	0.00
WASHINGTON	0.00	0	0	15.00
WEST VIRGINIA	0.00	0	0	0.00
WISCONSIN	NR	NR	NR	NR
WYOMING	NR	NR	NR	NR
** TOTAL **	735.50	0	0	39.50

HOLDINGS INFORMATION

State	Computer Printouts (Cu. Ft.)	Blueprints (Cu. Ft.)	Drawings (Cu. Ft.)
ALABAMA	360.00	130.00	300.00
ALASKA	0.00	20.00	10.00
ARIZONA	0.00	0.00	1.00
ARKANSAS	0.00	10.00	10.00
CALIFORNIA	15.00	600.00	900.00
COLORADO	NR	NR	NR
CONNECTICUT	0.00	75.00	200.00
DELAWARE	0.00	750.00	5.00
FLORIDA	4.00	60.00	40.00
GEORGIA	100.00	1000.00	200.00
HAWAII	0.00	0.00	4.00
IDAHO	0.00	0.00	0.00
ILLINOIS	30.00	40.00	120.00
INDIANA	NR	NR	NR
IOWA	0.00	?	100.00
KANSAS	25.00	2.00	2.00
KENTUCKY	139.00	942.50	42.50
LOUISIANA	0.00	8.75	1.00
MAINE	NR	NR	NR
MARYLAND	0.00	?	6.50
MASSACHUSETTS	NR	NR	NR
MICHIGAN	0.00	2.00	2000.00
MINNESOTA	20.00	100.00	65.00
MISSISSIPPI	0.00	26.00	1.00
MISSOURI	6.00	4.00	3.00
MONTANA	0.00	2.00	0.50
MONTANA	0.00	0.00	20.00
NEVADA	0.00	20.00	10.00
NEW HAMPSHIRE	0.00	1.00	9.00
NEW JERSEY	0.00	5.00	18.00
NEW MEXICO	NR	NR	NR
NEW YORK	0.00	15.00	510.00
NORTH CAROLINA	0.00	0.00	102.00
NORTH DAKOTA	0.00	2.00	10.00
OHIO	100.00	18.00	85.00
OKLAHOMA	0.00	34.00	150.50
OREGON	50.00	406.00	259.00
PENNSYLVANIA	4.50	509.00	146.00
RHODE ISLAND	0.00	0.00	5.00
SOUTH CAROLINA	300.00	10.00	120.00
SOUTH DAKOTA	0.00	100.00	102.00
TENNESSEE	0.00	0.00	4.00
TEXAS	15.00	0.00	250.00
UTAH	0.00	50.00	110.00
VERMONT	0.00	4.00	4.30
VIRGINIA	0.00	1.00	300.00
WASHINGTON	0.00	100.00	120.00
WEST VIRGINIA	0.00	160.00	75.00
WISCONSIN	NR	NR	NR
WYOMING	NR	NR	NR
** TOTAL **	1168.50	5207.25	6421.30

HOLDINGS INFORMATION

State	Nitrate Negatives (Cu. Ft.)	Safety Negatives (Cu. Ft.)	Glass Negatives (Cu. Ft.)	Photographic Prints (Cu. Ft.)
ALABAMA	0.00	0.00	0.00	0.00
ALASKA	0.00	12.00	0.00	2.00
ARIZONA	0.00	0.00	1.50	25.00
ARKANSAS	0.00	1.00	?	48.00
CALIFORNIA	6.00	2.00	1.00	50.00
COLORADO	NR	NR	NR	0.00
CONNECTICUT	?	?	?	350.00
DELAWARE	0.00	4.00	13.00	95.00
FLORIDA	1.60	265.20	2.95	53.25
GEORGIA	1.50	12.50	0.50	6.00
HAWAII	0.00	25.50	11.00	17.50
IDAHO	0.00	0.00	0.00	0.00
ILLINOIS	0.00	80.00	110.00	60.00
INDIANA	NR	NR	NR	NR
IOWA	0.00	0.00	0.00	1.25
KANSAS	0.00	0.00	0.00	0.00
KENTUCKY	0.00	10.00	0.66	309.00
LOUISIANA	0.00	8.00	0.00	8.00
MAINE	NR	NR	NR	NR
MARYLAND	0.00	0.50	0.75	2.00
MASSACHUSETTS	NR	NR	NR	NR
MICHIGAN	2.50	7.50	0.50	125.00
MINNESOTA	0.00	20.00	17.00	100.00
MISSISSIPPI	21.00	0.00	12.00	200.00
MISSOURI	0.00	1.00	0.00	30.00
MONTANA	10.00	10.00	15.00	55.00
MONTANA	0.00	0.00	0.00	0.00
NEVADA	0.00	0.00	0.00	3.00
NEW HAMPSHIRE	0.00	0.00	0.00	5.00
NEW JERSEY	0.00	6.00	10.00	20.00
NEW MEXICO	NR	NR	NR	NR
NEW YORK	0.00	5.00	150.00	20.00
NORTH CAROLINA	1.85	300.00	1.50	2.50
NORTH DAKOTA	0.00	1.00	0.00	20.00
OHIO	60.00	8.00	1.00	190.00
OKLAHOMA	0.00	0.50	0.00	35.00
OREGON	0.00	10.00	0.00	5.00
PENNSYLVANIA	10.00	130.00	15.00	250.00
RHODE ISLAND	0.00	0.00	0.00	0.00
SOUTH CAROLINA	0.00	3.00	0.00	5.00
SOUTH DAKOTA	0.00	0.25	0.50	5.00
TENNESSEE	0.00	0.00	0.00	0.00
TEXAS	0.50	12.00	0.25	44.00
UTAH	0.00	1.00	0.00	3.00
VERMONT	0.00	0.00	0.00	0.25
VIRGINIA	3.00	6.00	19.00	3.00
WASHINGTON	1.00	10.00	1.00	1.00
WEST VIRGINIA	0.00	1.00	0.25	7.50
WISCONSIN	NR	NR	NR	NR
WYOMING	NR	NR	NR	NR
** TOTAL **	118.95	952.95	384.36	2156.25

PRESERVATION INFORMATION

State	Volumes Treated	Encapsulated (Sheets)	Laminated (Sheets)	Deacidified (Sheets)
ALABAMA	0	162	539	1095
ALASKA	0	0	0	0
ARIZONA	35	19	0	63
ARKANSAS	20	667	700	3932
CALIFORNIA	6387	393	620	1013
COLORADO	NR	NR	NR	NR
CONNECTICUT	96	226	0	18500
DELAWARE	50	0	0	0
FLORIDA	?	?	?	?
GEORGIA	105	0	18847	18847
HAWAII	0	0	0	0
IDAHO	?	?	?	?
ILLINOIS	45	51	42276	43027
INDIANA	NR	NR	NR	NR
IOWA	0	0	0	0
KANSAS	0	0	0	0
KENTUCKY	0	2240	1053	8697
LOUISIANA	50	500	0	2000
MAINE	NR	NR	NR	NR
MARYLAND	77	530	65656	66186
MASSACHUSETTS	NR	NR	NR	NR
MICHIGAN	5	3	0	50
MINNESOTA	606	26	0	106
MISSISSIPPI	200	279	457	4801
MISSOURI	0	10	0	0
MONTANA	0	10	0	20
NEBRASKA	50	200	0	100
NEVADA	0	0	0	0
NEW HAMPSHIRE	0	0	0	0
NEW JERSEY	0	0	0	0
NEW MEXICO	NR	NR	NR	NR
NEW YORK	50	455	0	255
NORTH CAROLINA	100	100	35000	35000
NORTH DAKOTA	0	12	0	315
OHIO	20	25	0	500
OKLAHOMA	32	23	0	270
OREGON	0	0	0	0
PENNSYLVANIA	0	40	0	20
RHODE ISLAND	25	75	0	75
SOUTH CAROLINA	91	5161	4802	56234
SOUTH DAKOTA	10	100	0	100
TENNESSEE	0	76	918	2381
TEXAS	200	30000	0	30000
UTAH	0	0	0	0
VERMONT	20	30	0	200
VIRGINIA	30	0	26	3569
WASHINGTON	0	0	0	0
WEST VIRGINIA	0	5	0	10
WISCONSIN	NR	NR	NR	NR
WYOMING	NR	NR	NR	NR
** TOTAL **	8304	41418	170894	297366

FUMIGATION INFORMATION

State	Fumigator	Records Fumigated (Cu. Ft.)
ALABAMA	N	0
ALASKA	N	0
ARIZONA	N	0
ARKANSAS	Y	2000
CALIFORNIA	N	3
COLORADO	NR	NR
CONNECTICUT	N	0
DELAWARE	N	0
FLORIDA	Y	0
GEORGIA	Y	3050
HAWAII	Y	50
IDAHO	N	0
ILLINOIS	Y	0
INDIANA	NR	NR
IOWA	N	0
KANSAS	Y	0
KENTUCKY	Y	0
LOUISIANA	Y	20
MAINE	NR	NR
MARYLAND	N	0
MASSACHUSETTS	NR	NR
MICHIGAN	N	0
MINNESOTA	Y	20
MISSISSIPPI	Y	80
MISSOURI	N	0
MONTANA	N	0
NEBRASKA	N	0
NEVADA	N	0
NEW HAMPSHIRE	N	0
NEW JERSEY	Y	0
NEW MEXICO	NR	NR
NEW YORK	Y	0
NORTH CAROLINA	Y	500
NORTH DAKOTA	N	0
OHIO	Y	20
OKLAHOMA	N	0
OREGON	N	0
PENNSYLVANIA	Y	750
RHODE ISLAND	N	0
SOUTH CAROLINA	Y	30
SOUTH DAKOTA	N	0
TENNESSEE	Y	0
TEXAS	N	0
UTAH	N	0
VERMONT	Y	0
VIRGINIA	Y	50
WASHINGTON	Y	150
WEST VIRGINIA	N	0
WISCONSIN	NR	NR
WYOMING	NR	NR
** TOTAL **		6723

MICROGRAPHICS INFORMATION

State	Microfilm Production (Rolls)	Microfiche Production
Alabama	5	263
Alaska	0	0
Arizona	117	0
Arkansas	621	0
California	250	0
Colorado	NR	NR
Connecticut	0	0
Delaware	103	0
Georgia	750	100
Hawaii	382	0
Idaho	0	0
Illinois	206	0
Indiana	NR	NR
Iowa	0	0
Kansas	50	0
Kentucky	470	2200
Louisiana	100	0
Maine	NR	NR
Maryland	650	0
Massachusetts	NR	NR
Michigan	0	0
Minnesota	100	0
Mississippi	300	0
Missouri	100	250
Montana	0	0
Nebraska	120	0
Nevada	0	0
New Hampshire	35	0
New Jersey	35	0
New Mexico	NR	NR
New York	263	0
North Carolina	30	0
North Dakota	9	0
Ohio	89	0
Oklahoma	150	0
Oregon	397	0
Pennsylvania	190	0
Rhode Island	0	0
South Carolina	11	0
South Dakota	?	0
Tennessee	159	9
Texas	0	0
Utah	1700	600
Vermont	8	0
Virginia	87	0
Washington	0	0
West Virginia	?	?
Wisconsin	NR	NR
Wyoming	NR	NR
Total	7452	3413

MICROGRAPHICS INFORMATION

State	Microfilm Inspection Program (Periodic)	Microfilm Storage (ANSI Specs)	Microfilm Inspection (Density)	Microfilm Inspection Methylene Blue Test
ALABAMA	Y	N	Y	Y
ALASKA	N	N	NA	NA
ARIZONA	N	N	Y	Y
ARKANSAS	Y	N	Y	Y
CALIFORNIA	Y	N	Y	N
COLORADO	NR	NR	NR	NR
CONNECTICUT	?	?	?	?
DELAWARE	N	N	Y	Y
FLORIDA	N	Y	Y	Y
GEORGIA	N	Y	Y	Y
HAWAII	N	N	?	?
IDAHO	NA	NA	NA	NA
ILLINOIS	N	Y	Y	Y
INDIANA	NR	NR	NR	NR
IOWA	N	Y	Y	Y
KANSAS	N	Y	Y	Y
KENTUCKY	Y	Y	Y	Y
LOUISIANA	Y	Y	Y	Y
MAINE	NR	NR	NR	NR
MARYLAND	Y	N	Y	Y
MASSACHUSETTS	NR		NR	NR
MICHIGAN	?	Y	?	?
MINNESOTA	N	Y	Y	Y
MISSISSIPPI	N	N	N	N
MISSOURI	Y	N	Y	Y
MONTANA	N	N	N	N
NEBRASKA	Y	Y	Y	Y
NEVADA	NA	NA	NA	NA
NEW HAMPSHIRE	N	N	?	?
NEW JERSEY	N	Y	Y	Y
NEW MEXICO	NR	NR	NR	NR
NEW YORK	N	Y	Y	Y
NORTH CAROLINA	Y	Y	Y	Y
NORTH DAKOTA	N	N	Y	N
OHIO	N	Y	Y	Y
OKLAHOMA	N	N	Y	Y
OREGON	N	N	Y	Y
PENNSYLVANIA	N	Y	Y	Y
RHODE ISLAND	NA	NA	NA	NA
SOUTH CAROLINA	Y	Y	Y	Y
SOUTH DAKOTA	?	?	?	?
TENNESSEE	Y	N	Y	Y
TEXAS	N	N	Y	Y
UTAH	Y	Y	Y	Y
VERMONT	?	?	?	?
VIRGINIA	Y	N	Y	Y
WASHINGTON	Y	Y	Y	Y
WEST VIRGINIA	Y	Y	Y	Y
WISCONSIN	NR	NR	NR	NR
WYOMING	NR	NR	NR	NR